TECHNOLOGY NEEDS/OPPORTUNITIES STATEMENT

INTERMEDIATE AND LONG-TERM SURVEILLANCE OF SAFEGUARDS FUNCTIONS

General Reference Information	
1 *	***Need Title*:** Intermediate and Long-Term Surveillance of Safeguards Functions
2 *	***Need Code:*** RL-02-024-NM
3 *	***Need Summary*:** Thermally stabilized plutonium bearing materials are to be stored in 3013 containers for long periods of time awaiting final disposition by the Materials Disposition program. PNNL, Vista Technologies, and Fluor Hanford have developed (FY 2001) a remote (internal) pressure monitoring surveillance system for 3013 containers to be stored at PFP. A further need exists to enhance this pressure and safety monitoring surveillance system to incorporate safeguards monitoring functions for the storage container during storage. Desired safeguards functions include unique ID, radiation signature, integral diversion monitoring, and tamper indicators, that can be implemented periodically without complicated external equipment and the need to move the container to a test station location. This safeguards surveillance system could be used at Hanford, SRS, LANL, or other sites.
4 *	***Origination Date*:** October 3001
5 *	***Need Type*:**
6 *	***Operations Office*:** Richland Operations Office
7	***Geographic Site Name*:** Hanford Site
8 *	***Project*:** Nuclear Materials Stabilization PBS No: RL-CP03
9 *	***National Priority:*** ___1. High - Critical to the success of the EM program, and a solution is required to achieve the current planned cost and schedule. _X_2. Medium - Provides substantial benefit to EM program projects (e.g., moderate to high life-cycle cost savings or risk reduction, increased likelihood of compliance, increased assurance to avoid schedule delays). ___3. Low - Provides opportunities for significant, but lower cost savings or risk reduction, may reduce the uncertainty in EM program project success.
10	***Operations Office Priority*:**
Problem Description Information	
11	***Operations Office Program Description*:**
12	***Problem Description*:**
13	***Functional Performance Requirements*:**
14	***Definition of Solution*:**

15 *	***Targeted Focus Area*:** NMFA
16	***Potential Benefits*:**
17 *	***Potential Cost Savings*:** Because a specific technology has not yet been selected for use in monitoring safeguards characteristics for SNM in 3013 containers during initial storage at the PFP, then during transportation and long-term storage in 9975 transport containers, a direct cost savings cannot be calculated. However, the efficiency of a monitoring and surveillance system that uses remote sensing as compared to a system that could require removing 3013 containers from storage, or opening and examining individual items stored in 9975 containers is obvious. Since there will be at least several thousand items in storage at the PFP, and at the SRS incremented by a similar number originating from other DOE sites, a significant cost avoidance from avoiding extensive handling for surveillance is likely to accrue.
18 *	***Potential Cost Savings Narrative*:** See 17 above.
19	***Cultural/Stakeholder Basis*:**
20	***Environment, Safety, and Health Basis*:**
21	***Regulatory Drivers*:**
22 *	***Milestones*:** TRP-14-401 Complete PFP Deactivation, 9/30/16
23 *	***Material Streams*:** 3013's to SRS, stream #7235
24	***TSD System*:** Input not required.
25	***Major Contaminants*:**
26	***Contaminated Media*:**
27	***Volume/Size of Contaminated Media*:**
28 *	***Earliest Date Required*:** Could be implemented immediately
29 *	***Latest Date Required*:** 9/2014
Baseline Technology Information	
30	***Baseline Technology/Process*:** Technology Insertion Point(s): (as applicable)
31	***Life-Cycle Cost Using Baseline*:**
32	***Uncertainty on Baseline Life-Cycle Cost*:**
33	***Completion Date Using Baseline:***
Points of Contact (POC)	
34	***Contractor End User POCs*:**
35	***DOE End User POCs*:** Dr. Suzanne. E. Clarke (DOE-RL Project Manager) (509) 373-4931, fax (509) 372-3508, suzanne_e_clarke@rl.gov
36	***Other Contacts:*** M. W. Gibson, Fluor Hanford, Inc. (FH), (509) 373-4869, Fax (509) 372-0232, email mark_w_Gibson@rl.gov

*Element of a Site Need Statement appearing in IPABS-IS